Automotive Electrical and Engine Performance 9th Edition
Chapter 28 – PCM Fundamentals
Multiple Choice Questions Quiz B

1. What is the primary function of the clock generator in a vehicle's computer system?

a. To store diagnostic codes

b. To generate voltage signals for sensors

c. To produce consistent timing pulses for synchronizing components

d. To measure engine load

2. Which of the following types of memory retains information when the vehicle's ignition is turned off but loses data if the battery is disconnected?

a. Volatile RAM

b. Nonvolatile RAM

c. EEPROM

d. PROM

3. What type of driver in a vehicle computer system completes the ground path for a relay coil?

a. Analog driver

b. High-side driver

c. Low-side driver

d. PWM driver

4. How does an analog-to-digital (AD) converter function within an automotive computer system?

a. By amplifying sensor signals

b. By generating pulse-width modulated signals

c. By processing stored memory into output voltage

d. By converting analog voltage signals into binary digital data

5. What term describes the process of determining the optimal output settings for drivability and emissions using a vehicle on a dynamometer?

a. Reflashing

b. Engine mapping

c. Duty cycling

d. Input conditioning

6. Which sensor measures the oxygen content in the exhaust and provides feedback to the vehicle's computer for air-fuel ratio adjustments?

a. Mass Airflow (MAF) sensor

b. Throttle Position (TP) sensor

c. Oxygen (O2) sensor

d. Engine Coolant Temperature (ECT) sensor

7. What is the function of pulse-width modulation (PWM) in controlling automotive devices?

a. To increase the speed of data processing

b. To vary the on-time of electrical signals for precise control

c. To convert input voltage signals to analog data

d. To store vehicle speed information in memory

8. Which component is directly responsible for performing mathematical calculations in a vehicle computer system?

a. RAM

b. PROM

c. CPU

d. Actuator

9. Why might a vehicle's control module use a high-side driver instead of a low-side driver?

a. To enhance memory storage capacity

b. To provide better circuit protection and detect short circuits

c. To allow for faster computation of data

d. To simplify input conditioning

10. What is a key characteristic of EEPROM memory in vehicle computer systems?

a. It is erased when the ignition is turned off

b. It requires manual removal for reprogramming

c. It only stores temporary data for the processor

d. It can be programmed, erased, and reprogrammed electronically

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Answer Key Quiz B

Correct Answers:

1. c

2. a

3. c

4. d

5. b

6. c

7. b

8. c

9. b

10. d